RESPONSE TO 4/2/86 CL

1190400006 - Madison Co
Granite City/Reilly Tar & Chem

CERTIFIED MAIL RETURN RECEIPT REQUESTED

REILLY TAR & CHEMICAL CORPORATION

TELEPHONE: 317/638-7531
CABLE: RETAR INDIANAPOLIS
TELEX: 27-404

1510 MARKET SQUARE CENTER
151 NORTH DELAWARE STREET
INDIANAPOLIS, INDIANA 46204

April 16, 1986

Mr. Mark A. Haney, Manager
Facilities Compliance Unit
Compliance Monitoring Section
Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

RE: 1190400006 - Madison County
Granite City/Reilly Tar & Chemical
ILD006278360

Dear Mr. Haney:

In response to your letter of April 2 to Mr. William Justin, enclosed are three copies of an addendum to the annual report for Reilly's Granite City plant. I trust that the enclosed material adequately addresses the requirements of 35 IAC 725-194(b)(2) and that with the submission of this material we have corrected the apparent violation identified in your April 2 letter.

Please let me know if you have any questions concerning the enclosed or if our response is inadequate.

Very truly yours,

REILLY TAR & CHEMICAL CORPORATION

John C. Craun
Senior Engineer,
Corporate Environmental Affairs

JCC:lt

cc: W. A. Justin (w/ enclosure)
J. T. Lennon (w/ enclosure)
P. M. Rivers (w/ enclosure)

ADDENDUM TO THE ANNUAL REPORT
FOR REILLY TAR & CHEMICAL CORPORATION'S
GRANITE CITY, ILLINOIS PLANT
ILD006278360

The following paragraphs describe the rate of migration of hazardous constituents at the above-referenced facility based on the results of the Groundwater Quality Assessment Program from 1985 and the first quarter of 1986.

Groundwater Flow

Groundwater elevations measured in the surficial fine-grained alluvium indicate a shallow gradient generally trending towards the west, although groundwater elevations are sometimes so similar that a flow direction is difficult to discern clearly. The groundwater gradient is on the order of 0.002 to 0.005 ft/ft (based on elevations at well 6 or well 7 versus standpipe 10S). Assuming a permeability of 0.002 cm/sec and a porosity of 0.25 (per Dames & Moore's Nov. 1984 report, included as Section P of the Part B application), this yields a groundwater flow velocity of 0.05 to 0.1 ft/day.

Groundwater elevations measured in the top of the underlying American Bottoms aquifer (standpipes 8D, 9D, 10D, 11D and 12D) indicate highly variable flow directions and gradients. Flow direction ranges from generally west (March 1986), to southwest (January 1986 and May 1985), to northeast (February 1985), to indeterminant (other periods). Approximate gradients range from 0.0003 to 0.003 ft/ft. Assuming a permeability of 0.5 cm/sec and porosity of 0.1 (Dames & Moore November 1984 report), these gradients yield flow rates of from 4 to 40 ft/day.

Groundwater elevations measured in the shallow and deep standpipe pairs at wells 8, 9, 10, 11 and 12 provide information on the vertical component of groundwater flow at the site. These data indicate that shallow groundwater elevations are generally 1 to 2 inches lower than elevations in

the corresponding deep standpipes. However, a given well at a particular time may show larger upward or downward head differentials. Hence, the hydraulic relationship between the surficial alluvial groundwater and the American Bottoms aquifer is unclear at present.

Groundwater Quality

Monitoring data indicate that some Appendix VIII hazardous constituents are present in the surficial alluvium groundwater. The highest concentrations and largest number of Appendix VIII constituents are generally found in well 7, immediately north of the former surface impoundment. Hazardous constituents detected in this well include benzene, toluene, naphthalene, 1,1-dichloroethylene, cis- and trans-1,2-dichloroethylene, trichloroethylene, and tetrachloroethylene, plus ethylbenzene and xylene.

There is no evidence of off-site migration of hazardous constituents in the surficial aquifer. The shallow wells just inside the property line to the west of the surface impoundment (wells 3, 5, 10-1 and 11-1) have shown no detectable hazardous constituents.

Monitoring data are equivocal with respect to the extent that hazardous constituents have entered and are migrating in the American Bottoms aquifer. Traces of hazardous constituents (generally below about 10 ug/l total) have been detected in deeper monitoring wells on occasion, but few consistent or reproducible patterns have emerged. Low levels (10 to 100 ug/l range) of chlorinated solvents have been found consistently in wells 9-2 and 12-2, which are screened in fine sand at 50 to 60 feet deep, well above the coarse sand and gravel of the main aquifer. These wells are within 150 feet of the former surface impoundment and well inside the property limits.